PSD-LA-730, AI NO. 1406

AUTHORIZATION TO MODIFY AN EXISTING MAJOR STATIONARY SOURCE PURSUANT TO THE PREVENTION OF SIGNIFICANT DETERIORATION REGULATIONS IN LOUISIANA ENVIRONMENTAL REGULATORY CODE, LAC 33:III.509

In accordance with the provisions of the Louisiana Environmental Regulatory Code, LAC 33:III.509,

Motiva Enterprises LLC
Post Office Box 10
Norco, Louisiana 70079

is authorized to implement the Hydrocracking Unit Turnaround Project at the Norco Refinery at

15536 River Road
Norco
St. Charles Parish, Louisiana

subject to the emissions limitations, monitoring requirements and other conditions set forth hereinafter.

This permit and authorization to construct shall expire at midnight on _____, 2009, unless physical on site construction has begun by such date, or binding agreements or contractual obligations to undertake a program of construction of the source are entered into by such date.

Signed this _____ day of _____, 2008.

Chuck Carr Brown, Ph.D.
Assistant Secretary
Office of Environmental Services
Louisiana Department of Environmental Quality

BRIEFING SHEET

HYDROCRACKING UNIT TURNAROUND PROJECT - NORCO REFINERY
AGENCY INTEREST NO. 1406
MOTIVA ENTERPRISES LLC
NORCO, ST. CHARLES PARISH, LOUISIANA
PSD-LA-730

PURPOSE

To obtain a PSD permit for the HCU Turnaround Project.

RECOMMENDATION

Approval of the proposed construction and issuance of a permit.

REVIEWING AGENCY

Louisiana Department of Environmental Quality
Office of Environmental Services - Air Permits Division

PROJECT DESCRIPTION

Motiva proposes to modify the HCU and the Hydrogen Plants during the 2008 Turnaround. The turnaround modifications will result in minor changes inside the battery limits of the Distillation Unit (DU-5), Diesel Hydrotreater (DHT) Unit, and the Catalytic Reformer No. 2 (CR-2) Unit. The turnaround has a potential to result in an increased utilization (operating rate and/or hours of operation) of equipment downstream of the HCU and Hydrogen Plants (i.e., Catalytic Reformer No. 1 (CR-1) Unit, Saturates Gas Plant, Residue Catalytic Cracking Unit (RCCU), Sulfur Plant No. 2 (S-2), Sulfur Plant No. 3 (S-3), Logistics I area, and Logistics II area). The proposed modifications are as follows:

1. HCU 2nd Stage High Pressure Separator (PV-816): Changes will be made to the separator to improve its oil and water separation efficiency. The water phase from the separator is recycled for use to wash upstream exchangers, but the current phase separation efficiency limits the quantity of water that can be recycled. Therefore, the project will increase the amount of recycle water available for washing the exchangers upstream of the separator and, correspondingly, reduce the amount of fresh condensate water needed for the HCU 2nd stage. This project will not increase the utilization of the unit.
2. Replacement of Heat Exchanger (E-1057): The HCU heat exchanger will be replaced in part (channel and associated tubes) and in kind due to the eroded/corroded gasket surface on the tubesheet. Also, the current gasket area does not provide an adequate sealing surface for the joint. There will not be any increase in the utilization of the heat exchanger.
3. Hydrogen Plant Upgrade: Several control valves will be upgraded (to increase flow) without bypasses to minimize safety concerns and allow for valve maintenance without a unit shutdown. The project will also include re-rating several exchangers to ensure that they are not over-pressured. This will enhance the safety of the equipment.

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4. Install a new Naphtha Control Valve: The naphtha control valve, HV-0654, is used to control the 98% point of naphtha product to the catalytic reformers at 380°F. Failing to achieve 380°F for the naphtha 98% point means that a significant amount of naphtha will be left in the second stage main fractionator bottoms. The size of the valve does not allow for effective control and generates large temperature fluctuations. This project will replace the existing linear trim on the naphtha control valve with a more efficient trim. This change will increase the naphtha product feed to the catalytic reformers and potentially decrease naphtha product routed to the DHT. There will be an increase in product yield and a reduction in coke formation.

5. Install Positive Isolation Valve for 310# Steam to Methane Reformer Furnace (F-45): During turnarounds and emergency shutdowns, 310 pound steam line condensate leaks into the F-45 Steam Methane Reformer Furnace, which results in delayed startups. The objective of this project is to positively isolate the steam and provide a means for removing the condensate upstream of F-45 in an effort to prevent operational delays.

6. Install Ultra-Flat Quench (UFQ) Trays for 1st Stage HCU Reactor: The existing internals in the HCU 1st Stage Reactor take up unnecessary internal space that could be occupied by catalyst. The project includes the installation of UFQ trays and other internals into the HCU 1st Stage Reactor to increase the catalyst volume and the installation of high dispersion trays to improve the distribution throughput the reactor bed. This will increase the utilization of the unit.

7. Upsize Lean and Fat Diethanolamine (DEA) Piping: This project involves modifications to the HCU 1st Stage DEA Treater lean DEA inlet distributor and the HCU fat DEA pumps to increase their design flow rate capacities. Pipe diameter of the fat DEA lines between the HCU 1st Stage DEA Treater and Sulfur Plant No. 2 will be increased to increase the DEA flow rate while ensuring the resultant velocity is within the amine piping velocity specification. Additionally, Motiva proposes to install a new DEA pump, replace impellers on existing DEA pumps, and install a new distributor tray. The increase in DEQ flow rate will allow for an increase in the total sulfur content of the HCU feed. This will increase the utilization of the Sulfur Plants.

8. Increase the Turnaround Interval for the HCU: This project involves revising the existing piping configuration to allow for the bypass of heat exchangers while being cleaned "on the run," metallurgical upgrades for specific heat exchangers, an installation of equipment for the injection of a solvent material to clean a compressor "on the run." This will increase the operating time, utilization of the unit, and extend turnaround intervals from 3 to 5 years.

9. Replace Pumps P-1171 and P-2320: The existing pumps operate in light hydrocarbon service and are having seal leak problems. The pumps are old and the existing seals cannot be upgraded to mechanical seals; therefore, two new identical pumps with tandem seals and seal pots will be installed. This will improve the operational reliability of the equipment.

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10. Upgrade HCU Instrumentation: The project will upgrade HCU equipment control functions (Triconex or Delta V Logic) to improve operability and reduce unnecessary trips. No piping changes or hard instrumentation will be required. This will improve the operational reliability and reduce downtime.

11. DU-5 Vacuum Flasher Tray 3 Routed to HCU 1st Stage: New piping will be installed to allow up to 10 MBPD of the DU-5 Tray 3 Light Vacuum Gas Oil (LVGO) to be sent directly to the HCU 1st Stage feed drum. This will allow the refinery to market Tray 29/30 liquids as straight run diesel. This will not increase the utilization of the unit.

12. Replacement of the HCU Substation: The existing substation was installed in 1960's and is at the end of its useful life and no longer supported by the manufacturer for spare parts. The new substation will provide reliable electrical service to the HCU.

13. Reroute the DHT Naphtha to the HCU 2nd Stage Main Fractionator: Currently the hydrocarbon draw within the DHT stripper overhead accumulator is either refluxed back to the stripper or pumped to waste oil/water tanks D-413 and D-0422. DHT naphtha from the waste oil/water system will now be routed to the HCU 2nd Stage Main Fractionator, which will reduce the load on the waste oil/water system by 20% and alleviate safety concerns.

14. Replace Johnson Screens for High/Low Temperature Shift Reactors: The replacement of the catalyst support gratings and screens on both high temperature and low temperature shift converters will correct flow maldistribution and increase catalyst life.

15. Retray Sulfinol Regenerator: Currently the sulfinol system has excess CO_2 concentrations and high velocities which contribute to corrosion and erosion of the system. The project involves installing equipment that will improve the CO_2 stripping efficiency, reduce velocities, and improve distribution.

16. Replace HCU 2nd Stage Reactor Exchanger Tube Bundle: Replacement of the existing idle HCU 2nd Stage Reactor effluent cooling water exchanger tube bundle will provide additional cooling during summer months.

The Norco Refinery is a major stationary source under the Prevention of Significant Deterioration (PSD) program, LAC 33:III.509. The proposed HCU Turnaround Project will result in a significant net emissions increase of PM/PM_{10}, SO_2, NO_X, CO, and VOC. However, the only affected sources that are being physically modified are the fugitive emissions (due the addition of new piping components). The project will not cause any emissions units to experience a change in the method of operation. Therefore, best available control technology (BACT) is required only for VOC emissions from these components.

BRIEFING SHEET

HYDROCRACKING UNIT TURNAROUND PROJECT - NORCO REFINERY
AGENCY INTEREST NO. 1406
MOTIVA ENTERPRISES LLC
NORCO, ST. CHARLES PARISH, LOUISIANA
PSD-LA-730

TYPE OF REVIEW

The proposed permit was reviewed in accordance with PSD regulations for PM/PM_{10}, SO_2, NO_X, CO, and VOC emissions, as applicable, and a BACT analysis was conducted for the HCU Turnaround Project.

BEST AVAILABLE CONTROL TECHNOLOGY

Motiva shall comply with all applicable provisions of the following leak detection and repair (LDAR) programs as BACT: Louisiana MACT Determination for Refinery Equipment Leaks (Fugitive Emission Sources) dated July 26, 1994; 40 CFR 60 Subpart GGG; 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries; and LAC 33:III.2121 – Fugitive Emission Control.

AIR QUALITY IMPACT ANALYSIS

Prevention of Significant Deterioration regulations require an analysis of existing air quality for those pollutants to be emitted in significant amounts from a major modification. PM_{10}, SO_2, NO_X, CO, and VOC are pollutants of concern in this instance. Note that the HCU Turnaround Project is not associated with any increase in the short-term emissions rate of any pollutant, so analyses were not conducted for averaging periods other than annual. As CO only has short-term averaging periods (1-hour and 8-hour), no analyses were conducted for this pollutant.

Refined modeling demonstrates compliance with the PM_{10}, SO_2, and NO_X NAAQS. Modeling also demonstrates compliance with the allowable Class I and Class II PSD increments for PM_{10}, SO_2, and NO_X.

The net emissions increase of VOC associated with the HCU Turnaround Project will exceed 100 tons per year; therefore, an ambient air quality analysis and preconstruction monitoring are required for ozone. Motiva performed the screening analysis utilizing the procedure set forth by Scheffe's method. The increase in the ambient ozone concentration using this methodology was estimated to be 0.019 parts per million (ppm).

ADDITIONAL IMPACTS

Soils, vegetation, and visibility will not be adversely impacted by the proposed facility, nor will any Class I area be affected. The project will not result in any significant secondary growth effects.

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HYDROCRACKING UNIT TURNAROUND PROJECT - NORCO REFINERY
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PSD-LA-730

PROCESSING TIME

Application Dated:	July 16, 2007
Additional Information	August 30 and October 10, 2007
Modeling Data Submitted:	November 6 and November 27, 2007
Effective Completeness:	November 16, 2007

PUBLIC NOTICE

A notice requesting public comment on the permit was published in The Advocate, Baton Rouge, Louisiana; and in The St. Charles Herald-Guide, Louisiana, on ********* **, 2007. Copies of the public notice were mailed out to individuals on the mailing list maintained by Office of Environmental Services on ******* **, 2007. The proposed permit was sent to EPA via e-mail on ******** **, 2007. All comments shall be considered before a final decision is made.

PRELIMINARY DETERMINATION SUMMARY

NORCO REFINERY
AGENCY INTEREST NO. 1406
MOTIVA ENTERPRISES LLC
NORCO, ST. CHARLES PARISH, LOUISIANA
PSD-LA-730, NOVEMBER 16, 2007

I. APPLICANT

Motiva Enterprises LLC
Post Office Box 10
Norco, Louisiana 70079

II. LOCATION

The Motiva Enterprises LLC, Norco Refinery, is located at 15536 River Road, Norco, Louisiana 70079; approximate UTM coordinates are 7560.656 kilometers East and 3321.253 kilometers North, Zone 15.

III. PROJECT DESCRIPTION

Motiva proposes to modify the HCU and the Hydrogen Plants during the 2008 Turnaround. The turnaround modifications will result in minor changes inside the battery limits of the Distillation Unit (DU-5), Diesel Hydrotreater (DHT) Unit, and the Catalytic Reformer No. 2 (CR-2) Unit. The turnaround has a potential to result in an increased utilization (operating rate and/or hours of operation) of equipment downstream of the HCU and Hydrogen Plants (i.e., Catalytic Reformer No. 1 (CR-1) Unit, Saturates Gas Plant, Residue Catalytic Cracking Unit (RCCU), Sulfur Plant No. 2 (S-2), Sulfur Plant No. 3 (S-3), Logistics I area, and Logistics II area). The proposed modifications are as follows:

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16. Replace HCU 2nd Stage Reactor Exchanger Tube Bundle: Replacement of the existing idle HCU 2nd Stage Reactor effluent cooling water exchanger tube bundle will provide additional cooling during summer months.

The HCU Turnaround Project-affected units include:

- Hydrocracking Unit (HCU) (Emission Points 22-71, 23-71, 24-71, 25-71, 3011-95, Insignificant Activity (IA) A.11 (Catalyst Loading));
- Hydrogen Plant (Emission Points 2728-04, 5011-99, 26-71, 5012-99);

- Catalytic Reformer No. 1 Unit (Emission Points 14-71, 15-71);
- RCCU (Emission Point 1-91);
- Distilling Unit (DU-5) (Emission Point 3004-95);
- DHT Unit (Emission Point 3013-95);
- Catalytic Reformer No. 2 Unit (Emission Point 3010-95);
- S-2 Plant (Emission Points 23-76, 1011-95, 1014-95, 1053-95, 1107-95, 3303-95);
- Logistics I Area (Emission Points 4-84, 1230-95, 1238-95, 1247-95, 1254-95, 1035-95, 1068-95); and
- Logistics II Area (Emission Point 9-84).

Other miscellaneous routine maintenance and repair work will be performed on equipment during the HCU and Hydrogen Plant turnaround. There will not be any change in permitted emissions from other affected units: Catalytic Reformer (CR-1 and CR-2) Units, Sats Gas Plant, Residue Catalytic Cracking (RCC) Unit, Distillation Unit (DU-5), Diesel Hydrotreater (DHT) Unit, Sulfur Plant (S-2 and S-3), and Logistics I and II. Only the Hydrocracking Unit (HCU) and the Hydrogen Plant will experience improved uptime reliability.

The Norco Refinery is a major stationary source under the PSD program, LAC 33:III.509. Increases of PM/PM_{10}, SO_2, NO_X, CO, and VOC (without respect to deceases) associated with the proposed HCU Turnaround Project exceeded their respective significance levels. As such, a netting analysis was required.

Construction aspects of the HCU Turnaround Project are expected to begin by February 1, 2008. Therefore, the beginning of the contemporaneous period will be five years prior to February 1, 2008. Operations following the HCU Turnaround Project are expected to commence in March 2008. Therefore, all creditable emissions changes from February 1, 2003, through March 2008 will be accounted for in the contemporaneous period.

The proposed modifications will result in a significant net emissions increase of PM/PM_{10}, SO_2, NO_X, CO, and VOC. However, the only affected sources that are being physically modified are the fugitive emissions (due the addition of new piping components). Therefore, best available control technology (BACT), is required only for VOC emissions from these components. The selection of BACT was based on a "top down" approach and included consideration of control of toxic materials. The project will not cause any emissions units to experience a change in the method of operation.

IV. SOURCE IMPACT ANALYSIS

A proposed net increase in the emission rate of a regulated pollutant above de minimis levels for proposed major modifications requires review under PSD regulations, LAC 33:III.509. PSD permit reviews of proposed new or modified major stationary sources require the following analyses:

PRELIMINARY DETERMINATION SUMMARY

NORCO REFINERY
AGENCY INTEREST NO. 1406
MOTIVA ENTERPRISES LLC
NORCO, ST. CHARLES PARISH, LOUISIANA
PSD-LA-730, NOVEMBER 16, 2007

A. A determination of the Best Available Control Technology (BACT);

B. Analysis of the existing air quality and a determination of whether or not preconstruction or postconstruction monitoring will be required;

C. An analysis of the source's impact on total air quality to ensure compliance with the National Ambient Air Quality Standards (NAAQS);

D. An analysis of the PSD increment consumption;

E. An analysis of the source related growth impacts;

F. An analysis of source related impacts on soils, vegetation, and visibility;

G. A Class I Area impact analysis; and

H. An analysis of the impact of toxic compound emissions.

A. BEST AVAILABLE CONTROL TECHNOLOGY

Under current PSD regulations, an analysis of top down BACT is required for the control of each regulated pollutant emitted from a modified major stationary source in excess of the specified significant emission rates. The top down approach to the BACT process involves determining the most stringent control technique available for a similar or identical source. If it can be shown that this level of control is infeasible based on technical, environmental, energy, and/or cost considerations, then it is rejected and the next most stringent level of control is determined and similarly evaluated. This process continues until a control level is arrived at which cannot be eliminated for any technical, environmental, or economic reason. A technically feasible control strategy is on that has been demonstrated to function efficiently on identical or similar processes. Additionally, BACT shall not result in emissions of any pollutant which exceed any applicable standard under the requirements of 40 CFR Part 60 and 61.

VOC emissions (fugitives) are above the PSD de minimis levels from the HCU Turnaround Project and must undergo PSD analysis.

BACT Analysis for the Fugitive Emissions (VOC) from HCU Turnaround Project

Control techniques for VOC emission from piping and fugitive components is determined to be the implementation of a leak detection and repair (LDAR) program. The LDAR program is the primary method that refineries have been utilizing to minimize VOC emissions from fugitive leaks and is regarded by EPA and LDEQ as the top VOC control technology. BACT has been determined to be compliance with all applicable LDAR programs.

For fugitive emissions from the Hydrocracker Unit, Diesel Hydrotreater Unit, Distilling Unit, and the Catalytic Reformer #2 Unit , Motiva shall comply with all applicable provisions of the following leak detection and repair (LDAR) programs:

- Louisiana MACT Determination for Refinery Equipment Leaks (Fugitive Emission Sources) dated July 26, 1994.
- 40 CFR 60 Subpart GGG – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006
- 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries
- LAC 33:III.2121 – Fugitive Emission Control

For fugitive emissions from the Hydrogen Plant, Motiva shall comply with all applicable provisions of the following leak detection and repair (LDAR) programs:

- Louisiana MACT Determination for Refinery Equipment Leaks (Fugitive Emission Sources) dated July 26, 1994.
- 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries
- LAC 33:III.2121 – Fugitive Emission Control

B. ANALYSIS OF EXISTING AIR QUALITY

Prevention of Significant Deterioration regulations require an analysis of existing air quality for those pollutants to be emitted in significant amounts from a major modification. PM_{10}, SO_2, NO_X, CO, and VOC are pollutants of concern in this instance. Note that the HCU Turnaround Project is not associated with any increase in the short-term emissions rate of any pollutant, so analyses were not conducted for averaging periods other than annual. As CO only has short-term averaging periods (1-hour and 8-hour), no analyses were conducted for this pollutant.

AERMOD and CALMET/CALPUFF modeling of PM_{10}, SO_2, and NO_X increases associated with the HCU Turnaround Project indicates that the maximum concentrations of these pollutants will exceed their respective PSD ambient significance levels; therefore, refined NAAQS modeling and a determination of increment consumption were required. However, because the significant monitoring concentration (only applicable for NO_X in this instance) was not exceeded, pre-construction monitoring was not required.

Pollutant	Average Period	Screen	PSD Ambient Significance Level	Preconstruction Level	NAAQS
PM_{10}	Annual	8.3 $\mu g/m^3$	1 $\mu g/m^3$	-	50 $\mu g/m^3$
SO_2	Annual	1.3 $\mu g/m^3$	1 $\mu g/m^3$	-	80 $\mu g/m^3$
NO_2	Annual	1.3 $\mu g/m^3$	1 $\mu g/m^3$	14 $\mu g/m^3$	100 $\mu g/m^3$

The net emissions increase of VOC associated with the HCU Turnaround Project will exceed 100 tons per year; therefore, an ambient air quality analysis and preconstruction monitoring are required for ozone. Based on the refinery's proximity to existing ozone monitors (Hahnville, Kenner, New Orleans, St. James Parish, St. John Parish), LDEQ allowed use of data from these monitors to determine the representative background concentration. Motiva performed the screening analysis utilizing the procedure set forth by Scheffe's method. The increase in the ambient ozone concentration using this methodology was estimated to be 0.019 parts per million (ppm).

A summary of the air quality analyses is also presented in Table II.

C. NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) ANALYSIS

Refined modeling demonstrates compliance with the PM_{10}, SO_2, and NO_X NAAQS.

PM_{10}: The maximum modeled concentration at some receptors resulted in exceedances of the NAAQS. Investigation revealed that these exceedances occurred at receptors located on adjacent property and resulted from road dust and coke handling emissions (not associated with Motiva). The maximum concentration due to the HCU Turnaround Project was 30 $\mu g/m^3$, which is less than the NAAQS of 50 $\mu g/m^3$.

NO_2: The maximum modeled concentration at some receptors resulted in exceedances of the NAAQS. Investigation revealed that these exceedances occurred at receptors located on adjacent property and resulted from emissions from diesel engines not owned or operated by Motiva. The maximum concentration due to the HCU Turnaround Project was 99 $\mu g/m^3$, which is less than the NAAQS of 100 $\mu g/m^3$.

Pollutant	Averaging Period	Modeled + Background Concentration	NAAQS
PM_{10}	Annual	30 $\mu g/m^3$	50 $\mu g/m^3$
SO_2	Annual	42 $\mu g/m^3$	80 $\mu g/m^3$
NO_2	Annual	99 $\mu g/m^3$	100 $\mu g/m^3$

D. PSD INCREMENT ANALYSIS

Modeling demonstrates compliance with the allowable Class I and Class II PSD increments for PM_{10}, SO_2, and NO_X.

Class I Summary

Pollutant	Averaging Period	Modeled PSD Increment (Class I)	Proposed Significant Impact Level (SIL)	Allowable PSD Increment (Class I)
PM_{10}	Annual	0.0014 $\mu g/m^3$	0.20 $\mu g/m^3$	4 $\mu g/m^3$
	24-hour	0.0333 $\mu g/m^3$	0.30 $\mu g/m^3$	8 $\mu g/m^3$
SO_2	Annual	0.0023 $\mu g/m^3$	0.10 $\mu g/m^3$	2 $\mu g/m^3$
	24-hour	0.0565 $\mu g/m^3$	0.20 $\mu g/m^3$	5 $\mu g/m^3$
	3-hour	0.2033 $\mu g/m^3$	1.0 $\mu g/m^3$	25 $\mu g/m^3$
NO_2	Annual	0.0017 $\mu g/m^3$	0.10 $\mu g/m^3$	2.5 $\mu g/m^3$

Class II Summary

PM_{10}: The maximum modeled concentration at some receptors resulted in exceedances of the allowable Class II increment. Investigation revealed that these exceedances occurred at receptors located on adjacent property and resulted from a coke pile and cooler scrubber not owned or operated by Motiva. The increment consumed by the HCU Turnaround Project was 16 $\mu g/m^3$, which is less than the allowable of 17 $\mu g/m^3$.

Pollutant	Averaging Period	Modeled PSD Increment (Class II)	Allowable PSD Increment (Class II)
PM_{10}	Annual	16 $\mu g/m^3$	17 $\mu g/m^3$
SO_2	Annual	18 $\mu g/m^3$	20 $\mu g/m^3$
NO_2	Annual	22 $\mu g/m^3$	25 $\mu g/m^3$

E. SOURCE RELATED GROWTH IMPACTS

The HCU Turnaround Project is not expected to have any significant effect on residential growth or industrial/commercial development in the area of the facility. No significant net change in employment, population, or housing will be associated with the project. As a result, there will not be any significant increases in pollutant emissions indirectly associated with Motiva's proposal. Secondary growth effects will include temporary jobs which are related to the routine turnaround.

F. SOILS, VEGETATION, AND VISIBILITY IMPACTS

There will be no significant impact on area soils, vegetation, or visibility. The visibility analysis was conducted using EPA plume impact screen model, VISCREEN, version 1.01. The HCU Turnaround Project will not significantly impair the local visibility (see Table V). The air quality impact analysis indicates that the secondary NAAQS are not exceeded; therefore, there will not be any significant impact on soil and vegetation.

The estimated nitrogen and sulfur deposition rates at the Class I area are below the National Parks Service eastern Deposition Analysis Thresholds and the Forest Service Significance Impact Levels (see Tables III and IV).

G. CLASS I AREA IMPACTS

Breton National Wildlife Area, the nearest Class I area, is approximately 140 kilometers from the Norco Refinery site. As described above, the modeling indicated that there will not be any significant impact on Breton Wilderness Area.

H. TOXIC EMISSIONS IMPACT

The selection of control technology based on the BACT analysis included consideration of control of toxic emissions.

V. CONCLUSION

The Department of Environmental Quality - Office of Environmental Services has made a preliminary determination to approve the PSD permit for Motiva Enterprises LLC's Norco Refinery, located in Norco, St. Charles Parish, Louisiana, subject to the attached specific and general conditions. In the event of a discrepancy in the provisions found in the application and those in this Preliminary Determination Summary, the Preliminary Determination Summary shall prevail.

SPECIFIC CONDITIONS

NORCO REFINERY
AGENCY INTEREST NO. 1406
MOTIVA ENTERPRISES LLC
NORCO, ST. CHARLES PARISH, LOUISIANA
PSD-LA-730

This permit is issued under the following conditions:

1. The permittee is authorized to operate in conformity with the specifications submitted to the Louisiana Department of Environmental Quality (LDEQ) as analyzed in LDEQ's document entitled "Preliminary Determination Summary," dated November 16, 2007. Specifications submitted are contained in the application and Emission Inventory Questionnaire (EIQ) dated July 16, 2007; additional information submitted dated August 30 and October 10, 2007; and modeling submitted on November 7 and November 27, 2007.

MAXIMUM ALLOWABLE EMISSIONS RATES

ID No.	Description		VOC
3011-95	Fugitive Emissions – Hydrocracker Unit	TPY	100.40
5011-99	Hydrogen Plant Fugitive Emissions	TPY	15.41
3013-95	Fugitive Emissions – Diesel Hydrotreater Unit	TPY	67.51
3004-95	Fugitive Emissions – Distilling Unit	TPY	182.63
3010-95	Fugitive Emissions Catalytic Reformer #2 Unit	TPY	120.57

2. For Source ID Nos. 3011-95, 3013-95, 3004-95, and 3010-95, the permittee shall comply with all applicable provisions of the following leak detection and repair (LDAR) programs:
   - Louisiana MACT Determination for Refinery Equipment Leaks (Fugitive Emission Sources) dated July 26, 1994.
   - 40 CFR 60 Subpart GGG – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006
   - 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries
   - LAC 33:III.2121 – Fugitive Emission Control

3. For Source ID No. 5011-99, the permittee shall comply with all applicable provisions of the following leak detection and repair (LDAR) programs:
   - Louisiana MACT Determination for Refinery Equipment Leaks (Fugitive Emission Sources) dated July 26, 1994.
   - 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries
   - LAC 33:III.2121 – Fugitive Emission Control

NORCO REFINERY
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PSD-LA-730, NOVEMBER 16, 2007

TABLE I: BACT COST SUMMARY

N/A		Availability/ Feasibility	Negative Impacts (a)	Control Efficiency %	Emissions Reduction (TPY)	Annualized Cost ($)	Cost Effectiveness ($/Ton)	Notes

TABLE II: DISPERSION MODELING RESULTS (µg/m³)

Pollutant	Averaging Period	Preliminary Screening Concentration	Level of Significant Impact	Significant Monitoring Concentration	At the Monitoring Station		Background	Maximum Modeled Concentration	Modeled + Background Concentration	NAAQS	Modeled PSD Increment Consumption	Allowable Class II PSD Increment
					Monitored Values	Modeled Concentration						
PM_{10}	Annual	8.3	1	-	24	5	19	11	30	50	16	17
SO_2	Annual	1.3	1	-	11	21	-7	42	42	80	18	20
NO_X	Annual	1.3	1	14	23	43	-9	99	99	100	22	25
NR = Not required.												

NORCO REFINERY
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PSD-LA-730, NOVEMBER 16, 2007

TABLE III: CLASS I AREA DEPOSITON IMPACT - TOTAL NITROGEN AND SULFUR DEPOSITION (kg/hectare/yr)

Species	Class I Area	Forest Service Green Line Deposition Threshold	National Parks Deposition Assessment Threshold	Maximum Modeled Deposition
Total Nitrogen	Breton Wilderness	3.0	0.01	0.00039
Total Sulfur	Breton Wilderness	3.0	0.01	0.00172

TABLE IV: CLASS I AREA THRESHOLD AND CALPUFF RESULTS (ug/m^3)

Pollutant and Averaging Time	Class I Area Threshold		CALPUFF Estimated Maximum Concentration
	Proposed SIL	Allowable Increment	
PM_{10}	0.20	4.00	0.0014
SO_2	0.10	2.00	0.0023
NO_2	0.10	2.50	0.0017
SIL = Significance Impact Level			

TABLE V: LEVEL I VISCREEN RESULTS

Background	Sun's Radiation	Distance (km)	Delta E		Contrast	
			Critical	Plume	Critical	Plume
Sky	10	25	2.0	1.569	0.05	-0.002
Sky	140	25	2.0	0.49	0.05	-0.008
Terrain	10	25	2.0	0.368	0.05	0.005
Terrain	140	25	2.0	0.109	0.05	0.004
The delta E (critical) and the Contrast (critical) were not exceeded for both sky and terrain backgrounds by the plume.						

TABLE VI: COMPLIANCE TEST REQUIREMENTS

Emission Point	Control Devices / Work Practices	Test Method	Criteria Being Tested	Notes
Fugitives from Hydrocracker Unit 3011-95 Hydrogen Plant 5011-99 Diesel Hydrotreater Unit 3013-95 Distilling Unit 3004-95 Catalytic Reformer No. 2 Unit 3010-95	LDAR	40 CFR 60, Appendix A, Method 21	Leaks	